

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
29 July 2004 (29.07.2004)

PCT

(10) International Publication Number
WO 2004/062348 A3

(51) International Patent Classification⁷: **A01F 29/00**

(21) International Application Number:
PCT/CA2004/000035

(22) International Filing Date: 14 January 2004 (14.01.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
2,416,238 14 January 2003 (14.01.2003) CA

(71) Applicant and

(72) Inventor: ROUSSEAU, Victor [CA/CA]; 591, Route 259
Sud, J0G 1N0 Sainte-Monique, Québec, CA (CA).

(74) Agent: OGILVY RENAULT; 1981 McGill College Avenue,
Suite 1600, Montreal, 10 H3A 2Y3 (CA).

(81) Designated States (*unless otherwise indicated, for every
kind of national protection available*): AE, AG, AL, AM,
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,

GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,
ZW.

(84) Designated States (*unless otherwise indicated, for every
kind of regional protection available*): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),
Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), Euro-
pean (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR,
GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK,
TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW,
ML, MR, NE, SN, TD, TG).

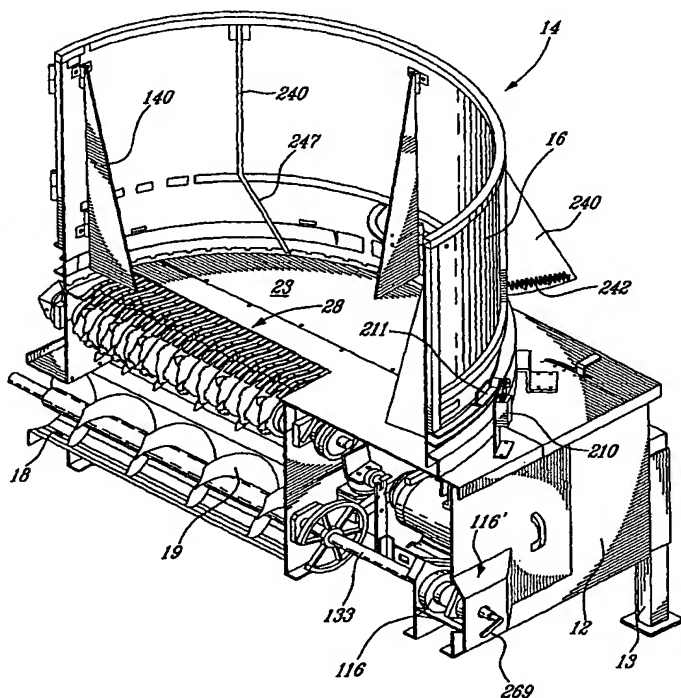
Published:

— with international search report

(88) Date of publication of the international search report:
7 October 2004

*For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.*

(54) Title: HAY BALE PROCESSOR



(57) Abstract: A hay bale processor (10) having a cylindrical rotatable drum (14) adapted to displace a bale of hay (156-157) over a grill (26) which has a plurality of spaced-apart parallel slot openings (27) which are adjustable to define an average fiber cut length. A rotor (28) driven by an electric motor (66-67) has cutting blades (35) projecting through the openings to contact a bottom face (159) of a bale of hay (160) displaced over the grill. The rotor has a driveable shaft (29) secured to a displaceable suspension mechanism (45) to displace the blades (35) in the openings and above the grill a variable distance depending on the resistive load applied.

The displaceable suspension mechanism (45) is biased upwardly by an air cylinder (50) or air cushion device (280) to maintain a substantially constant pressure on the displaceable suspension such that when the load on the cutting knives of the rotor are subjected to a force exceeding the predetermined pressure of the cylinder the rotor is displaced whereby a substantially constant drive torque is maintained on the electric motor driving the shaft (29) of the rotor (28).

INTERNATIONAL SEARCH REPORT

International Application No

PCT/CA2004/000035

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 A01F29/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 A01F A01D A01K B02C

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 4 134 554 A (MORLOCK RUBEN D) 16 January 1979 (1979-01-16) column 3, line 34 -column 4, line 40 figures 1-4 ---	1,2,18, 25
A	US 4 846 411 A (HERRON MAYNARD M ET AL) 11 July 1989 (1989-07-11) column 5, line 15 - line 48 figures 1-3 ---	1,2,20, 34
A	EP 0 407 112 A (KIDD FARM MACHINERY) 9 January 1991 (1991-01-09) column 5, line 41 -column 7, line 26 figures 1,2,4 --- -/-	1,2,27, 34



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

* Special categories of cited documents:

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

27 May 2004

Date of mailing of the international search report

20.07.04

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Baltanás y Jorge, R

INTERNATIONAL SEARCH REPORT

International Application No

PCT/CA2004/000035

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>US 3 966 128 A (ANDERSON JOSEPH A ET AL) 29 June 1976 (1976-06-29)</p> <p>column 2, line 15 -column 5, line 20 figures 1-3</p> <p>---</p>	<p>1,10-12, 18,25, 34,35</p>
A	<p>US 5 653 394 A (TOPPING GILBERT ET AL) 5 August 1997 (1997-08-05)</p> <p>column 3, line 42 -column 4, line 31 figures 5,6</p> <p>-----</p>	<p>1,34</p>

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/CA2004/000035

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 4134554	A	16-01-1979	NONE	
US 4846411	A	11-07-1989	CA 1297388 C	17-03-1992
EP 0407112	A	09-01-1991	CA 2020146 A1	02-01-1991
			EP 0407112 A1	09-01-1991
			US 5277372 A	11-01-1994
US 3966128	A	29-06-1976	NONE	
US 5653394	A	05-08-1997	CA 2160646 A1	17-04-1997